**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| ART UNIT: 2853<br>EXAMINER: Laura E. Martin<br>FIRST NAMED INVENTOR: Paul Bruinsma<br>SERIAL NO.: 10/825,736<br>FILED: 4/15/2004<br>CONF. NO.: 8822<br>FOR: INK-JET PRINTING SYSTEM WITH REDUCED NOZZLE CLOGGING<br>DOCKET NO.: 200309260-1 | **CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8**<br>DATE OF DEPOSIT: March 31, 2010<br>I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being submitted on the date indicated above via:<br>☒ EFS Web<br>☐ facsimile to 571-273-8300<br>☐ the United States Postal Service with sufficient postage as first class mail addressed to: Mail Stop _____, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.<br>/brendawiseman/<br>Brenda Wiseman |

## APPELLANTS' APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Mail Stop Appeal Brief – Patents

Dear Sir:

Appellants submit this appeal brief in connection with their appeal from the Final Rejection, mailed February 4, 2010, of all pending claims in the above-identified application. A Notice of Appeal was filed on March 30, 2010.

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## I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

## II. RELATED APPEALS AND INTERFERENCES

Appellants and Appellants' legal representatives know of no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-7, 9-22, and 24-30 remain pending. Claims 8 and 23 have been canceled. Thus, the claims on appeal in this application are claims 1-7, 9-22, and 24-30, which constitute all of the claims presently pending for consideration.

## IV. STATUS OF AMENDMENTS

No amendments to pending claims 1-7, 9-22, and 24-30 have been made since the Office Action mailed on February 4, 2010, which was the final rejection of the pending claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

**Claim 1 sets forth** a fluid dispensing system for ink-jet printing, [p. 2, ln. 15-25; p. 6, ln. 25 – p. 2, ln. 5; generally p. 6, ln. 25 – p. 20, ln. 7] comprising:

(a) an ink-jet ink including from 0.1 wt% to 6 wt% anionic dye colorant and from 0.05 wt% to 1.0 wt% of an anionic dispersant polymer, [p. 2, ln. 19-21; p. 6, ln. 25-27; p. 10, ln. 14 – p. 12, ln. 10] and

(b) a fixer composition including a cationic crashing agent that is reactive with a component of the ink-jet ink [p. 2, ln. 21; p. 6, ln. 25-29],

said fluid dispensing system configured for overprinting or underprinting the fixer composition with respect to the ink-jet ink [p. 2, ln. 22-25; p. 4, ln. 23 – p. 5, ln. 20; p. 6, ln. 29-32; p. 12, ln. 13-17].

**Claim 16 sets forth** a method of ink-jet imaging [p. 2, ln. 26-32; p. 7, ln. 6-16; generally p. 6, ln. 25 – p. 20, ln. 7], comprising:

(a) jetting an ink-jet ink from ink-jet printing nozzles, said ink-jet ink including from 0.1 wt% to 6 wt% of an anionic dye colorant and from 0.05 wt% to 1.0 wt% of an anionic dispersant polymer, [p. 2, ln. 26-32; p. 7, ln. 6-16; p. 10, ln. 14 – p. 12, ln. 10] and

(b) jetting a fixer composition from fixer printing nozzles, wherein the fixer composition is overprinted or underprinted with respect to the ink-jet ink, said fixer composition including a cationic crashing agent reactive with a component of the ink-jet ink [p. 2, ln. 27-32; p. 4, ln. 23 – p. 5, ln. 20; p. 7, ln. 7-13; p. 12, ln. 13-17)].

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues presented for review are:

(1) whether claims 1-3, 5-7, 9-18, 20-22, and 24-30 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,958,121 (hereinafter "Lin") in view of U.S. Patent No. 5,624,484 (hereinafter "Takahashi"); and

(2) whether claims 4 and 19 are unpatentable under 35 U.S.C. § 103(a) over Lin and Takahashi, and further in view of U.S. Patent No. 6,328,413 (hereinafter "Rutland").

VII. ARGUMENT

The shortcomings of the rejections will now be reviewed. Appellants' silence herein with respect to particular statements by the United States Patent and Trademark Office does not indicate agreement with or acquiescence thereto.

A. Appellants' Claims

The claims at issue are directed toward a system (claim 1) and method (claim 16) for ink-jet imaging. The system and method each provide reduced nozzle clogging due to cross-contamination.

Claim 1 sets forth a fluid dispensing system specifically designed for ink-jet printing comprising an ink-jet ink with from 0.1 wt% to 6 wt% of an anionic dye colorant and from 0.05 wt % to 1.0 wt % of an anionic dispersant polymer. Claim 1 also sets forth a fixer composition with a cationic crashing agent that is reactive with a component of the ink-jet ink. The fluid dispensing system is configured for overprinting or underprinting the fixer composition with respect to the ink-jet ink.

Claim 16 sets forth a method for ink-jet imaging including jetting from printing nozzles an ink-jet ink that includes from 0.1 wt% to 6 wt% of an anionic dye colorant and from 0.05 wt% to 1.0 wt% of an anionic dispersant polymer, and jetting from printing nozzles a fixer composition including a cationic crashing agent reactive with a component of the ink-jet ink. The fixer composition is either overprinted or underprinted with respect to the ink-jet ink.

For background, it should be noted that cross contamination of printing nozzles can be a significant problem in the ink-jet arts, particularly because nozzles are very small and ink-jet imaging is a very precise art. Fixers, as a general rule, tend to react or crash with inks (by design

when printed on paper). However, small aerosol droplets and/or liquid migration on printheads can cause inappropriate reaction at the nozzles, thus leading to clogging of the nozzles. Thus, the claimed invention deals with this problem.

B. The Lin Reference

The Lin reference is directed to paper curl reduction process by applying an aqueous dye or pigment ink in an image-wise fashion to one side of a substrate, and applying a clear aqueous liquid to the opposite side of the substrate. Lin teaches that a variety of chemical additives can be included in the aqueous inks and clear aqueous liquids, including surfactants, wetting agents, polymeric chemical additives to enhance the viscosity of the ink, and in the case of **pigments**, dispersants.

C. The Takahashi Reference

The Takahashi reference discloses a liquid composition consisting of a cationic substance of polyallylamine and glycerol. Takahashi also teaches an ink-jet ink with an anionic dye colorant. Additionally, the reference discloses the steps of overprinting and underprinting with respect to an ink. Takahashi teaches, in the context of printing with **pigments**, an ink-jet ink including 0.1 wt % to 5 wt % of a dispersant.

D. Rejections Under 35 U.S.C. § 103(a)

1. Requirements Under § 103(a)

Before discussing the rejections under 35 U.S.C. § 103(a), it is thought proper to state what is required to sustain such a rejection. The issue under § 103(a) is whether the USPTO has

stated a case of *prima facie* obviousness. The burden under § 103(a) to establish a *prima facie* case of obviousness rests with the USPTO. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

The framework for an analysis of obviousness as stated and reaffirmed by the U.S. Supreme Court is provided by the following inquiries:

(a) Ascertaining the content and scope of the prior art;

(b) Ascertaining the differences between the claimed invention and the prior art; and

(c) Resolving the level of ordinary skill in the pertinent art.

*Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966); see also *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

As a fundamental step in the analysis, the USPTO must establish that every element of the claimed invention is taught or suggested by the prior art. When a combination of references are asserted as prior art against a claim, all of the references must be analogous art with respect to the claimed invention. MPEP 2141.01(a) I. The USPTO must then determine whether the claimed invention would have been obvious to one of ordinary skill in the art and establish a *prima facie* case of obviousness by an explicit showing of a supporting rationale. The U.S. Supreme Court has affirmed that a legal conclusion of obviousness cannot be sustained by mere conclusory statements, but rather by "articulated reasoning with some rational underpinning" *KSR* at 418, quoting *In re Kahn,* 441 F.3d 977, 988 (Fed Cir. 2006).

With this brief background in mind, Appellants contend that the USPTO has failed to meet its burden of establishing a *prima facie* case of obviousness. Particularly, the Examiner has failed to show that the cited reference teaches or fairly suggests each and every element of the present

claims so as to support a conclusion of obviousness.

2. Rejection of claims 1-3, 5-7, 9-18, 20-22, and 24-30 under 35 U.S.C. § 103(a) over Lin in view of Takahashi

Claims 1-3, 5-7, 9-18, 20-22, and 24-30 stand finally rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Lin in view of Takahashi. Appellants contend that the Examiner has not met its burden of establishing a *prima facie* case of obviousness, as these references fail to teach or suggest every element of these claims in the arrangement required by the claims.

a. Use of dyes and pigments in inks

Recognizing that the differences between dyes and pigments may seem subtle to an untrained individual in the ink-jet arts; however, Appellants wish to briefly discuss these ink components. Often times, references are directed to inks that may include pigment or dye as the coloring agent. Formulating pigment-based inks and dye-based inks pose different problems. When, for example, formulating inks for use in an ink-jet printer, the ink should be capable of moving through and ejection from the printer via customary routes, i.e. ink flow paths and printheads. Each ink must be formulated to have appropriate dispersion, homogeneity, and viscosity properties, for example, to travel through the printer. Further, the ink must be formulated to appropriately respond to the printing mechanisms of the printer, for example, heat or piezoelectric energy. Additionally, the ink must be formulated to settle on a print media and provide an image as desired.

Pigments and dyes affect overall properties of and ink in different ways, and interact with

other ink components in different ways. That said, it has become customary in the art of ink design and formulation to discuss many ink components generally, and not clarify use with dye or pigment or both dye and pigment, even though the chemistry of each requires fundamentally different considerations, i.e. pigments are small dispersed particulates needing dispersing and dyes are generally water or solvent soluble (requiring no dispersion). As a result, one skilled in the ink-jet arts would know that dispersants are used with **pigment** colorants in order to facilitate their dispersion in the ink and to avoid agglomeration or clumping of the pigments. In contrast to this, separate dispersants are *not* thought to be used in **dye** based inks, as dyes are soluble in their vehicle and do not benefit from the dispersing agent acting on the colorant *per se*. Thus, any reference that teaches pigments used with dispersants is wholly known and common. Contrary to this, the use of a dispersant with a dye is typically unnecessary and unorthodox.

It is important to note that the anionic dispersing agents used in the systems of the presently claimed invention are not present to act on or with the unprecipitated anionic dyes present in the systems. Rather, the anionic dispersing agents are present in the system to alleviate and/or eliminate nozzle clogging in an ink-jet system when cross contamination might occur with a fixer composition. Specifically, but without being limited by theory, "it is believed that the presence of an anionic dispersant polymer in the ink-jet ink can reattach to undesired anion dye/cationic crashing agent precipitate through a combination of coulombic interactions between the anionic dispersant polymer and cationic polymer." Page 8, lines 13-16 of Appellants' specification (emphasis added). In other words, by including a dispersing agent in the ink-jet ink, nozzle clogging that might otherwise occur as a result of anionic dye/cationic crashing agent precipitation from cross-contamination can be alleviated. With this in mind, our discussion turns to the cited references.

b. Lin fails to teach or suggest the elements required by the claims at issue

The Lin reference teaches a set of inks which can include a first ink and a second ink. The first ink has a color and comprises water and a colorant selected from the group consisting of anionic dyes, dyes having physically or chemically associated therewith a stabilizing agent having anionic groups, pigment particles having anionic groups chemically attached thereto, pigment particles having physically or chemically associated therewith a stabilizing agent having anionic groups thereon, and mixtures thereof. The second ink includes a cationic ammonium functional group to immobilize the first ink. The Examiner has cited a specific portion of Lin (col. 18, lines 24-43; and column 21, lines 11-15 and 46-51) as allegedly teaching the presence of both anionic dyes and anionic dispersing agents. Although this passage does provide a laundry list of a variety of possible stabilizers, including anionic, cationic, and non-ionic stabilizers, Appellants submit that there is no clear teaching of the use of an anionic dye of one weight percent concentration with an anionic dispersing agent present in another weight percent concentration.

In response to Appellants' observations to this effect, the Examiner has particularly pointed to column 21, lines 11-37 of Lin to assert that such a combination is taught. See e.g. Final Office Action, page 11, paragraph 2. Appellants point out that to present a *prima facie* case of obviousness, "the examiner must provide evidence which as a whole shows that the legal determination sought to be proved…is more probable than not." MPEP 2142 (emphasis added). Appellants submit that the teaching of Lin as a whole does not support a determination that Appellants' claims are obvious.

Regarding the language pointed to by the Examiner, Appellants submit that the phrase "the dye or pigment" should be read in light of the preceding disclosure within its specification,

particularly from column 17, line 64 up to the cited language. Particularly, Lin teaches that colorants to be used in the inks can be selected from dyes, pigments, and mixtures thereof. Column 17, 64-67. In view of this and the knowledge of those skilled in the art that dispersants generally are of no need in inks which solely utilize dye colorants, it is reasonable that any subsequent discussion of dispersants be provided to address those embodiments that include pigments. Not surprisingly, Lin immediately goes on to discuss the use of dispersants exclusively in the context of pigments, which is completely conventional. Column 18, lines 4-23. Lin then goes on to set forth lists of suitable dyes and pigments, but without affirmatively teaching the combination of an anionic dye colorant with an anionic dispersant polymer. Column 18, line 44 to column 21, line 11.

Appellants submit that in view of the preceding disclosure and the knowledge in the art, the phrase "the dye or pigment" at column 21, line 11 cannot be considered a clear or affirmative teaching of the combination of elements recited in each of claims 1 and 16. While the use of dispersants is well known and often required when using pigments, dyes are generally soluble, and considered to need no dispersing. Thus, based on this conventional knowledge, and based on the fact that nothing to the contrary is taught in this reference, one skilled in the art would never assume that the dispersant discussion relates to anything other than the pigment. If there were a reason to combine anionic dyes with anionic dispersing agents, this is non-conventional enough that the Lin reference would have set such a combination out clearly, as the Appellants have done in the present application. Absent a clear teaching putting these two ingredients together, anyone skilled in the art would not put these two elements together in the manner that the Examiner has done.

Further, Appellants have noted that the reference at the location cited by the Examiner

discusses anionic dyes separately from dyes having physically or chemically associated stabilizing agents. Nowhere does the reference refer separately to an embodiment where an anionic dye is used in an ink, and further a different concentration of a dispersing agent is used, as required by the currently claimed invention.

In response, the Examiner has pointed further to language at column 18, lines 44-48 as suggesting that the anionic dyes listed thereafter are to be combined with anionic stabilizing agents. The language cited in fact states that "[a]ny suitable dye or mixture of dyes that is compatible with the other ink ingredients can be used." Appellants submit that this vague language (e.g. "the other ink ingredients") should be read in view of the whole disclosure and the knowledge in the art. One skilled in the art would be well aware that inks commonly contain a variety of other ingredients besides colorant, including biocides, humectants, and surfactants. Such a one would more likely view this language as advising compatibility of the dye with these kinds of additives. This language does not demonstrate that a skilled artisan would more likely than not unconventionally associate the listed anionic dyes with anionic dispersants. The Examiner asserts that "[i]t would obvious that [the listed anionic dyes] is referring to the second ink as the first ink contains specifically anionic dyes and the third and fourth inks contain pigments." Appellants point out that Lin discloses a composition with two inks. The "inks" to which the Examiner appears to be referring are actually a list of possible colorants for the first ink of the composition. See e.g. column 11, lines 13-31. As such, Appellants submit that the inclusion of anionic inks in the list beginning at column 18, line 45 does not raise the assumption argued by the Examiner.

c. Takahashi fails to remedy the deficiencies of Lin

The Examiner has combined Lin with Takahashi, where Takahashi is cited to provide an alleged teaching of overprinting and underprinting of a fixer composition. However, Appellants assert that the present claims are also patentable over this combination of references because Takahashi fails to remedy the deficiencies of Lin described above. Specifically, Takahashi does not teach or suggest an ink-jet ink with from 0.1 wt% to 6 wt% of an anionic dye colorant and from 0.05 wt % to 1.0 wt % of an anionic dispersant polymer. Rather, like Lin, Takahashi teaches these components as alternatives, with the dispersant being used in conjunction with pigments rather than dyes. In fact, Takahashi supports the Appellants' assertion that one skilled in the art would typically not use dispersants with dyes, but rather would use dispersants with pigments. When dispersing agents are discussed in Takahashi, they are always tied directly to the use of a pigment in the ink and not to the use of an anionic dye as required by the currently pending claims. This can be seen at col. 5, lines 20-25, where Takahashi proposes the use of inks "comprising a dye containing an anionic group..., or inks comprising an anionic compound and a pigment" (emphasis added). Elsewhere in Takahashi, the ink is again described as using either an anionic dye or a pigment, and Takahashi goes on to teach that "[i]n the case where the pigment is used as a coloring material, an anionic compound is used in combination." Col. 8, lines 11-15 (emphasis added). See also col. 9, lines 35-37, lines 53-55, and lines 58-60; Column 10, lines 3-5 and lines 54-56; Column 11, lines 4-9 and lines 30-35; as well as the Examples. Nowhere does Takahashi teach the combination of anionic dye colorant and anionic dispersant polymer in an ink-jet ink as recited in claims 1 and 16. Consequently, Takahashi does not remedy the deficiencies of Lin with regard to teaching or suggesting the elements of these claims.

In light of the above, Appellants submit that claims 1 and 16 are patentable over the combination of Lin and Takahashi, as these references fail to teach every element of these claims in the arrangement required by the claims. Instead, both of these references teach combinations or arrangements that, while indicative of the knowledge and expectations of those of ordinary skill in the art, are different from Appellants' claims. Appellants submit that in view of the differences between Appellants' claims and the references and understanding of the art, the present invention as a whole would not be obvious to one skilled in the art from the teaching of the references. Furthermore, this is also true for all of the claims depending from claims 1 and 16, in that each includes all of the limitations of the claim from which it depends.

Therefore, Appellants respectfully submit that claims 1-3, 5-7, 9-18, 20-22, and 24-30 are allowable over the cited references and urge withdrawal of the rejection.

E. Rejection of claims 4 and 19 over Lin and Takahashi in view of Rutland

Claims 4 and 19 stand finally rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lin and Takahashi in further view of Rutland. The Examiner has cited Rutland, to remedy the deficiency of Lin and Rutland with respect to claims 4 and 19. Specifically, Rutland is cited to provide a teaching of ink-jet printing nozzles and fixer printing nozzles configured in a proximity such that, upon jetting, small amounts of fixer composition aerosol jetted from the fixer printing nozzles contact the ink-jet ink printing nozzles, thereby resulting in the ink-jet printing nozzles being susceptible to cross-contamination by the fixer composition. Appellants submit that not only does Rutland not remedy the missing elements of the combination of Takahashi and Lin with respect to the presence of an anionic dye and an anionic dispersing agent, Rutland also does not teach a system with all of the claim limitations required by claims 4

and 19. In fact, Rutland is more properly considered to teach away from such a combination.

Specifically, the Examiner has cited to column 2, line 66 to column 3, line 28 of Rutland for support of the teaching that the ink-jet printing nozzles and fixer printing nozzles can be close enough together to be susceptible to cross-contamination. See e.g. Final Office Action, page 10, paragraph 4. Appellants note that such discussion is in the background section of the Rutland patent and generally teaches away from the use of ink-jet nozzles which cause cross-contamination, particularly when a "fixer" solution is present. The purpose of the invention taught in Rutland is to minimize "cross-contamination of print cartridges in an inkjet printing system due to aerosol drift by employing a bidirectional spitting scheme coupled with a configuration of the print cartridges." In other words, Rutland teaches a method and/or system for minimizing cross-contamination which involves, amongst other things, configuring the print nozzles or cartridges in such a way as to eliminate or avoid cross-contamination. Therefore, Appellants submit that Rutland teaches away from the required elements of claims 4 and 19.

The Examiner has asserted that "Rutland does not teach away from spitting" and that "the problems foreseen in Rutland will not prevent the present usage in the combination of references." Final Office Action, page 12, paragraph 1. Appellants point out that the claims at issue require not spitting *per se*, but an arrangement of printing nozzles in which the claimed printing system and method are particularly relevant. It should be kept in mind, therefore, that claims 4 and 19 include the limitations recited in claims 1 and 16, respectively. As such, the question is whether the asserted combination of references would suggest the claimed invention as a whole. Appellants assert that, in addition to its failure to remedy the deficiencies of Lin and Takahashi, Rutland would guide one skilled in the art to an arrangement of elements quite unlike that set forth in the claims. Rather than the composition and arrangement recited in Appellants' claims,

Rutland would more likely lead one to a more conventional ink set employed with a bidirectional spitting scheme coupled with a configuration of the print cartridges.

As such, even if the combination of Takahashi and Lin were to teach all of the required elements of claims 1 and 16, (see above) claims 4 and 19 could not be rendered obvious by their combination with Rutland. Stated another way, the need for specialized configuration of various nozzles is not necessary in the claimed invention if the system of the claimed invention is implemented, because the ink compositions themselves can ameliorate clogging due to cross contamination. The Examiner, recognizing that Rutland teaches an approach to clogging that is different from the claimed invention, has asserted that "there are multiple means by which to solve a problem". *Id.* However, the existence of multiple approaches does not in itself render all such approaches mutually obvious, particularly when the approaches are divergent. As Appellants have discussed above, the cited combination of references would not guide one skilled in the art to the arrangement recited in Appellants' claims.

In view of the above, Appellants submit that the combination of Lin, Takahashi, and Rutland do not present a *prima facie* case of obviousness with regard to claims 4 and 19. As such, removal of the rejections based on Rutland is respectfully requested.

F. Conclusion

In conclusion, Appellants respectfully submit that the claims at issue are patentably distinct from the asserted prior art references. Particularly, the combination of Lin in view of Takahashi, and the combination of Lin in view of Takahashi further in view of Rutland fail to teach each and every element of the present claims, within the meaning of 35 U.S.C. § 103.

Since the Patent Office has not met its initial burden of establishing a *prima facie* case of obviousness, the Appellants respectfully submit that all remaining rejections are improper, and should be overturned.

Dated this 31st day of March, 2010.

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VIII. CLAIMS APPENDIX

The following is a clean listing of Appellants' claims that are involved in the current Appeal (i.e. claims canceled during prosecution are not listed):

1. A fluid dispensing system for ink-jet printing, comprising:

(a) an ink-jet ink including from 0.1 wt% to 6 wt% anionic dye colorant and from 0.05 wt% to 1.0 wt% of an anionic dispersant polymer, and

(b) a fixer composition including a cationic crashing agent that is reactive with a component of the ink-jet ink,

said fluid dispensing system configured for overprinting or underprinting the fixer composition with respect to the ink-jet ink.

2. A fluid dispensing system as in claim 1, wherein the dispensing system further includes ink-jet ink printing nozzles for printing the ink-jet ink and fixer printing nozzles for printing the fixer composition, and wherein the anionic dispersant is present in the ink-jet ink at an amount that inhibits crashing from occurring at the ink-jet ink printing nozzles.

3. A fluid dispensing system as in claim 2, wherein the ink-jet printing nozzles and the fixer printing nozzles are present on a common nozzle plate,.

4. A fluid dispensing system as in claim 2, wherein the ink-jet printing nozzles and the fixer printing nozzles are configured in a proximity such that, upon jetting, small amounts of fixer composition aerosol jetted from the fixer printing nozzles contact the ink-jet ink printing nozzles, thereby resulting in the ink-jet printing nozzles being susceptible to cross-contamination by the fixer composition.

5. A fluid dispensing system as in claim 2, wherein the ink-jet printing nozzles and the fixer printing nozzles are serviced by a common wiper.

6. A fluid dispensing system as in claim 2, wherein the ink-jet ink and the fixer

composition are present in two separate ink-jet pens.

7. A fluid dispensing system as in claim 2, wherein the ink-jet ink and the fixer composition are present in two separate reservoirs of a common ink-jet pen.

9. A fluid dispensing system as in claim 1, wherein the cationic crashing agent is present in the fixer composition at from 1 wt% to 5 wt%.

10. A fluid dispensing system as in claim 1, wherein the anionic dispersant polymer is a copolymer that includes both a hydrophobic group and an anionic group.

11. A fluid dispensing system as in claim 1, wherein the anionic dispersant polymer has a weight average molecular weight from 4,000 Mw to 50,000 Mw.

12. A fluid dispensing system as in claim 1, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof.

13. A fluid dispensing system as in claim 12, wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquaternaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

14. A fluid dispensing system as in claim 12, wherein the crashing agent is a multivalent metal ion provided by a member selected from the group consisting of multivalent metal nitrate salts, EDTA salts, phosphonium halide salts, organic acid salts, chloride salts, and combinations thereof.

15. A fluid dispensing system as in claim 12, wherein the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p-bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5-sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α-alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

16. A method of ink-jet imaging, comprising:

(a) jetting an ink-jet ink from ink-jet printing nozzles, said ink-jet ink including from 0.1 wt% to 6 wt% of an anionic dye colorant and from 0.05 wt% to 1.0 wt% of an anionic dispersant polymer, and

(b) jetting a fixer composition from fixer printing nozzles, wherein the fixer composition is overprinted or underprinted with respect to the ink-jet ink, said fixer composition including a cationic crashing agent reactive with a component of the ink-jet ink.

17. A method as in claim 16, wherein the anionic dispersant is present in the ink-jet ink at an amount that inhibits crashing from occurring at the ink-jet ink printing nozzles.

18. A method as in claim 17, wherein the ink-jet printing nozzles and the fixer printing nozzles are present on a common nozzle plate.

19. A method as in claim 17, wherein the ink-jet printing nozzles and the fixer printing nozzles are configured in a proximity such that, upon jetting, the ink-jet ink printing nozzles are susceptible to contamination from small amounts of fixer composition aerosol jetted from the fixer printing nozzles.

20. A method as in claim 17, wherein the ink-jet printing nozzles and the fixer printing nozzles are serviced by a common cleaning system.

21. A method as in claim 16, wherein the ink-jet ink and the fixer composition are present in two separate ink-jet pens.

22. A method as in claim 16, wherein the ink-jet ink and the fixer composition are present in two separate reservoirs of a common ink-jet pen.

24. A method as in claim 16, wherein the cationic crashing agent is present in the fixer composition at from 1 wt% to 5 wt%.

25. A method as in claim 16, wherein the anionic dispersant polymer is a copolymer that includes both a hydrophobic and an anionic group.

26. A method as in claim 16, wherein the anionic dispersant polymer has a weight average molecular weight from 4,000 to 50,000 Mw.

27. A method as in claim 16, wherein the crashing agent is selected from the group consisting of cationic polymers, multivalent metal ions or ionic groups, acids, and combinations thereof.

28. A method as in claim 27, wherein the crashing agent is a cationic polymer selected from the group consisting of polyvinylpyridines, polyalkylaminoethyl acrylates, polyalkylaminoethyl methacrylates, poly(vinyl imidazole), polyethyleneimines, polybiguanides, polyguanides, polyvinylamines, polyallylamines, polyacrylamines, polyacrylamides, polyquaternaryamines, cationic polyurathenes, aminecelluloses, polysacchride amines, and combinations thereof.

29. A method as in claim 27, wherein the crashing agent is a multivalent metal ion provided by a member selected from the group consisting of multivalent metal nitrate salts, EDTA salts, phosphonium halide salts, organic acid salts, chloride salts, and combinations thereof.

30. A method as in claim 27, wherein the crashing agent is an acid selected from the group consisting of succinic acid, glycolic acid, citric acid, nitric acid, hydrochloric acid, phosphoric acid, sulfuric acid, polyacrylic acid, acetic acid, malonic acid, maleic acid, ascorbic acid, glutaric acid, fumaric acid, tartaric acid, lactic acid, nitrous acid, boric acid, carbonic acid, carboxylic acids such as formic acid, chloroacetic acid, dichloroacetic acid, trichloroacetic acid, fluoroacetic acid, trimethylacetic acid, methoxyacetic acid, mercaptoacetic acid, propionic acid, butyric acid, valeric acid, caprioc acid, caprylic acid, capric acid, lauric acid, myristic acid, palmitic acid, stearic acid, oleic acid, rinolic acid, rinoleic acid, cyclohexanecarboxylic acid, phenylacetic acid, benzoic acid, o-toluic acid, m-toluic acid, p-toluic acid, o-chlorobenzoic acid, m-chlorobenzoic acid, p-chlorobenzoic acid, o-bromobenzoic acid, m-bromobenzoic acid, p-bromobenzoic acid, o-nitrobenzoic acid, m-nitrobenzoic acid, p-nitrobenzoic acid, oxalic acid, adipic acid, phthalic acid, isophthalic acid, terephthalic acid, salicylic acid, p-hydrobenzoic acid, anthranilic acid, m-aminobenzoic acid, p-aminobenzoic acid, benzenesulfonic acid, methylbenzenesulfonic acid, ethylbenzenesulfonic acid, dodecylbenzenesulfonic acid, 5-sulfosalicylic acid, 1-sulfonaphthalene, hexanesulfonic acid, octanesulfonic acid, dodecanesulfonic acid, amino acids such as glycine, alanine, valine, α-aminobutyric acid, α-aminobutryic acid, α-alanine, taurine, serine, α-amino-n-caprioc acid, leucine, norleucine, phenylalanine, and combinations thereof.

## IX. EVIDENCE APPENDIX

(None)

## X. RELATED PROCEEDINGS APPENDIX

(None)